

SDMS Doc ID 2003539

ORDOT LANDFILL

ISLAND OF GUAM

0000073

September 10, 1985

R E M II

**PERFORMANCE OF REMEDIAL RESPONSE
ACTIVITIES AT UNCONTROLLED
HAZARDOUS WASTE SITES**

U.S. EPA CONTRACT NO. 68-01-6939

CAMP DRESSER & MCKEE INC.

ROY F. WESTON, INC.

WOODWARD-CLYDE CONSULTANTS

CLEMENT ASSOCIATES, INC.

ICF INCORPORATED

C. C. JOHNSON & ASSOCIATES, INC.

JC concern
+ in SCAP for
RUEHS for January -
would like to start
in Jan

WORK PLAN MEMORANDUM

FOR

ORDOT LANDFILL

ISLAND OF GUAM

0000073

September 10, 1985

WORK ASSIGNMENT NO. 168-9LA7.0

CONTRACT NO. 68-01-6439

Prepared by:

CAMP DRESSER & MCKEE, INC.

CDM

environmental engineers, scientists,
planners, & management consultants

CAMP DRESSER & MCKEE INC.

337 North Vineyard Avenue, Suite 103
Ontario, California 91764
714 986-8811

September 10, 1985

Mr. Keith Takata, Regional Project Officer
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Mr. Thomas A. Mix, Region Project Manager
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Subject: Work Plan Memorandum for Ordot Landfill,
Island of Guam

Work Assignment No.: 168-9LA7.0
EPA Contract No.: 68-01-6939
Document No.: 279-WP1-WM-BKXD-2

Dear Mr. Takata and Mr. Mix:

Camp Dresser & McKee Inc. is pleased to submit the Work Plan Memorandum for Initial Planning and Scoping Activities for the Ordot Landfill site on the Island of Guam.

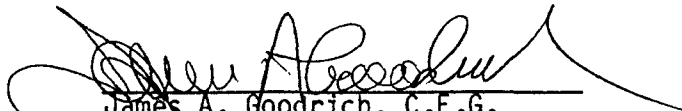
There are no substantial exceptions to the schedule, budget, and level of effort estimates provided by U.S. EPA in the Work Assignment. We estimate the total cost to be \$50,000, for the Work Assignment. These estimates are based on the direct and indirect costs for the REM II team: detailed costs and fees are supported in Attachments A, B, C, and D. The Scope of Work Assignment has been modified to reflect the work currently underway by the Guam EPA. In particular, the Community Relations Plan, Quality Assurance Project Plan, and the Project Operations Plans, have not been budgeted until the work being done by Guam EPA has been determined. If these plans are found to be necessary as part of this Work Assignment, then an amendment to the Work Assignment will be submitted.

It has been determined that no conflict of interest exists for the Regional and Site Managers for this Work Assignment. Also, it has been determined that no organizational conflict of interest exists for Camp Dresser & McKee Inc.

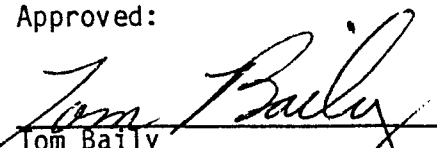
If you have any questions or comments, please contact us.

Very truly yours,

CAMP DRESSER & MCKEE, INC.


James A. Goodrich, C.E.G.
Site Manager

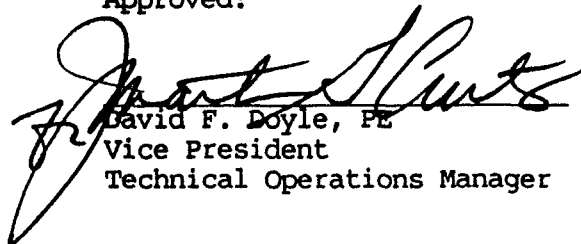
Approved:


Tom Bailey
Woodward-Clyde Consultants
Region IX Manager

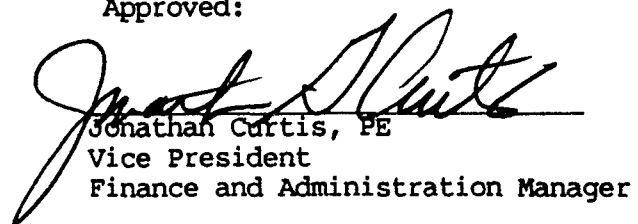
Ordot Landfill Work Plan Memorandum
Mr. Keith Takata
Mr. Thomas Mix

Page 2

Approved:


David F. Doyle, PE
Vice President
Technical Operations Manager

Approved:


Jonathan Curtis, PE
Vice President
Finance and Administration Manager

cc: V. Joiner - Contracting Officer, USEPA
Linda Boornazian - Project Officer, USEPA
S. Hooper, Regional Coordinator, USEPA

Receipt by EPA Region IX Acknowledged:

Exceptions Noted:

_____ Regional Project Officer	_____ Date	_____ Yes	_____ No
_____ Regional Project Manager	_____ Date	_____ Yes	_____ No
Explanation of exceptions attached		_____ Yes	_____ No

Routing of Acknowledgment:

Return original to REM II Site Manager - James A. Goodrich

Copies to:
REM II Project Officer - L. Boornazian
REM II NPMO - J. G. Curtis

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WORK PLAN MEMORANDUM
FOR THE
ORDOT LANDFILL SITE, ISLAND OF GUAM

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WORK PLAN MEMORANDUM
FOR THE
ORDOT LANDFILL SITE, ISLAND OF GUAM

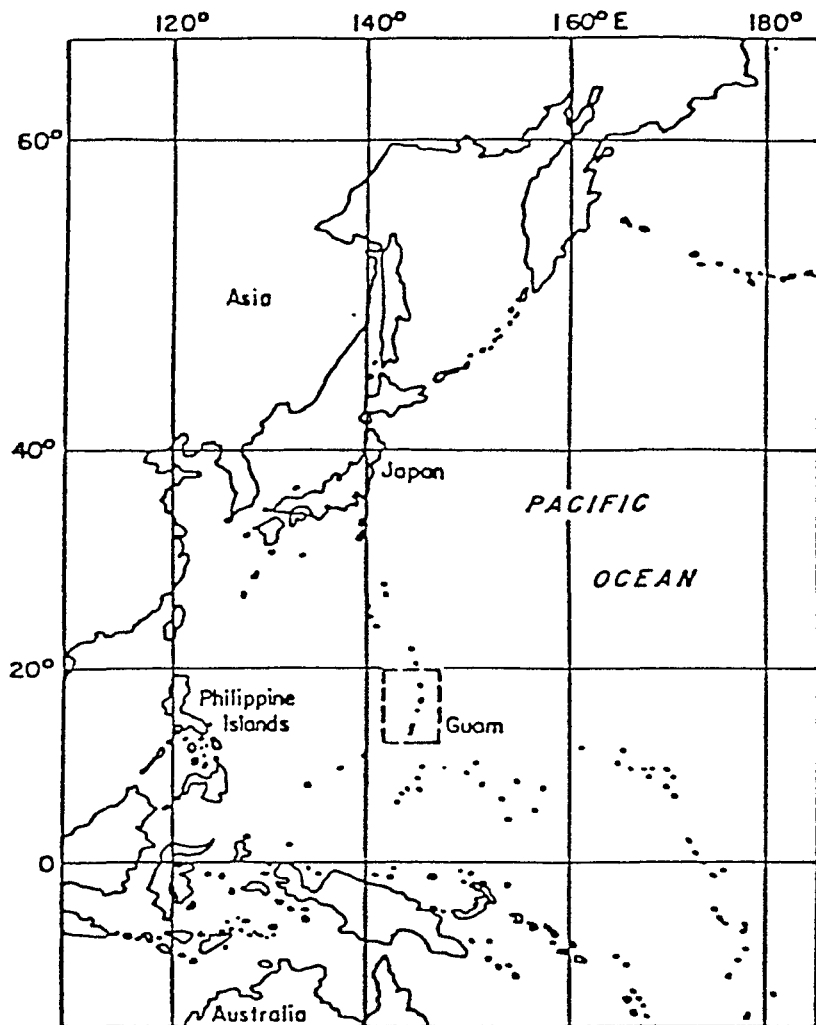
1.0 INTRODUCTION

This Work Plan Memorandum presents the initial tasks to be performed, budget estimates, and schedule of deliverables for the Ordot Landfill Site, located on the Island of Guam. This document is submitted in response to USEPA Work Assignment No. 168-9LA70, dated August 14, 1985.

The Island of Guam is located in the western Pacific region, approximately half way between Japan and New Guinea (Figure 1), and is the largest island in the Mariana Island group. Guam has an area of about 212 square miles, is approximately 30 miles long, and ranges between 4 and 11.5 miles wide (Figure 2). The island has two very distinct physiographic divisions. The southern half is composed of rugged volcanic upland and the northern half of the island is characterized by a limestone plateau. The majority of Guam's drinking water supply comes from groundwater produced from the limestone aquifer in the northern part of the island.

The Ordot Landfill is located in the northern part of the volcanic upland area, near the divide between the limestone and volcanic provinces (Figure 2). It receives the majority of the wastes generated on the island and was designed and operated as a municipal landfill. However, the landfill is known to have received hazardous wastes during its history, which dates back to the Japanese occupation during World War II. The site is known to have received PCB contaminated oils from transformers, munitions, and hazardous wastes commonly used in households and light industry. However, records do not exist regarding when, how much, and what type of hazardous wastes were disposed of at the landfill.

Uncontrolled disposal of hazardous and other wastes at the Ordot Landfill has resulted in several problems, including uncontrolled surface runoff, explosive gas emissions, and vector proliferation. Because surface runoff into and across the landfill is uncontrolled, leachate leaves the site and enters the Pago and Lonfit Rivers, and eventually reaches Pago Bay on the east side of the island. Fish kills have been reported in the Pago River and contamination of marine life and recreational areas in Pago Bay are potential public health problems. Runoff from the landfill does not appear to enter the groundwater system used by Guam for their drinking water supply; however, this should be verified during the Remedial Investigation. Methane gas is generated by the decomposing waste materials in the landfill and subsequently escapes into the air. The explosion potential at the landfill caused by the ignition of the methane gas is a significant public health problem. Uncovered garbage attracts disease-carrying vectors, such as rats and flies, as well as wild dogs who forage through the garbage for food.



• Farallon de Pajaros

• Maug Islands

• Asuncion

• Agrihan

• Pagan

M A R I A N A

• Alomagan

• Guguan

I S L A N D S

• Sarigan

Anatahan

• Farallon de Medinilla

• Saipan
• Tinian
• Aguijan

Rota

Guam

REFERENCE: MAP ENTITLED "TRUST TERRITORY OF THE PACIFIC ISLANDS" BY THE U.S. DEPT. OF THE INTERIOR. UNDATED

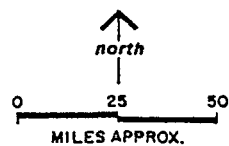


FIGURE 1
LOCATION MAP
ISLAND OF GUAM

[illegible]

FIGURE 2
OF ORDOT LANDFILL
AND OF GUAM

a) if project is not a CERCLA/PCRA site, adequately characterize the extent of any actual or potential past impacts associated with releases from the site.
b) identify information gaps, if necessary
c) if needed, prepare a Work Plan for a limited RI

The purpose of this assignment is to collect and evaluate existing data to determine what, if any additional data are required to conduct a feasibility study which defines the remedial actions required to mitigate the public health and environmental problems associated with the site. The tasks described in this document include:

- Task 1. Prepare Work Plan Memorandum
Task 2. Existing Data Collection, Review, and Evaluation
Task 3. Prepare Community Relations Plan (option)
Task 4. Prepare Quality Assurance Project Plan (option)
Task 5. Prepare Draft Project Operations Plan (option)
Task 6. Prepare RI/FS Work Plan
Task 7. Technical and Financial Management

Also contained in this document are the estimated budget and manpower requirements, project schedule, and the key staff assigned to the project.

2.0 INITIAL SCOPE OF SERVICES

TASK 1. PREPARE WORK PLAN MEMORANDUM

Objective:

The objective of this task is to review easily available information regarding the site and prepare the Work Plan Memorandum. The Work Plan Memorandum will define the objectives, deliverables, schedule, and budget of all tasks conducted up to and including the preparation of the RI/FS Work Plan.

Data Sources:

The basis for preparing the Work Plan Memorandum will be: (1) the "Aquifer Yield Report" prepared by CDM for the Guam EPA; and (2) the "Remedial Investigation for Insular Territory Hazardous Waste Sites," prepared by Black and Veatch for the USEPA. and "An Investigation of Surface and Ground Water in the Vicinity of the Corder Landfill for Hazardous Organic Assumptions: None. Materials by the University of Guam"

Deliverables: Work Plan Memorandum.

Quality Control:

Prior to submitting the Work Plan Memorandum to the EPA for approval, it will be reviewed and approved by the REM II Regional Manager, Technical Operations Manager, and the Finance and Administration Manager.

- In addition, the entire GEM/USE RIFS will be evaluated to determine if it will adequately define the extent of the actual or potential environmental impacts and whether the mitigation is being conducted in accordance with the RIFS. 2. The mitigation is judged to not conform to the RIFS. 3. data gaps and develop a

TASK 2. EXISTING DATA COLLECTION, REVIEW, AND EVALUATION

Objective:

The objective of this task is to collect, review, and evaluate existing *work plan* pertinent data concerning the Ordot Landfill from federal and local *to fill them* agencies, and private organizations. Information will include, but not be *in accordance* limited to the following:

- This work plan, if needed, will complete it, but not duplicate, the GEM/USE RIFS*
 - o Information regarding the source(s) of contamination and migration pathways (existing and potential).
 - o Site characterization work completed to date, including soil, air, surface water, and groundwater monitoring and sampling results.
 - o Local and regional geologic, hydrogeologic, hydrologic, and climatic conditions which may affect the site problem.
 - o Description of local land uses and environmental settings.
 - o Data concerning the threat of contamination to human health and the environment.
 - o Removal and/or remedial actions taken to date, including provisions of alternate drinking water supplies, on-site source control (eg, hazardous waste removal and soil excavation work), and extraction and treatment systems.
 - o Documentation supporting the removal and/or remedial actions taken to date.
 - o A determination on who will be doing the RI/FS and whether the Community Relations Plan, Quality Assurance Project Plan, and Project Operations Plans will be developed as part of this work assignment.

Data Sources:

The sources of data will include, but not be limited to the following:

U.S. Environmental Protection Agency
U.S. Department of the Navy
U.S. Department of the Air Force
U.S. Geological Survey
National Oceanographic and Atmospheric Administration
Guam Environmental Protection Agency
Public Utility Agency of Guam
University of Guam, Water and Energy Research Institute of the Western Pacific
Camp Dresser & McKee Inc. data files for Guam

Assumptions:

Federal and local agencies will furnish the required information at little or no cost to CDM.

Deliverables:

The deliverable for this subtask will be the Initial Site Evaluation Report, which will contain the history of the site, the present condition of the site, a listing of the types and location of the pertinent data which are available, and a listing of the gaps in the existing data base. This report will be used to develop the RI/FS Work Plan.

Quality Control

Prior to submitting the Initial Site Evaluation Report for final sign-off, it will be reviewed and approved by the Regional Manager with regard to its technical content and its adherence to established report guidelines.

TASK 3. PREPARE COMMUNITY RELATIONS PLAN

Since the issuance of the Work Assignment, EPA has requested verbally to not prepare a Community Relations Plan at this time. For this reason, this task has not been budgeted. If, however, after the initial site visit, a Community Relations Plan is determined to be necessary, the following criteria will guide its preparation.

Objective:

The objective of this task is to determine if a Community Relations Plan will be necessary, and if so, to prepare a Community Relations Plan which will ensure that interested citizens and agencies are informed of the progress of the work and involved in the decision process. Community Relations support may involve:

- o Canvassing the community to identify interested citizen groups and local elected officials.
- o Drafting information bulletins and fact sheets.
- o Preparing graphic materials.
- o Making public meeting arrangements.

Data Sources:

The Community Relations Plan will be prepared based on the information gathered and developed in Task 2.

Assumptions:

This task will be done only after approval is received for a Work Assignment Amendment and a budget has been established to do the work.

Deliverables: Community Relations Plan

Quality Control:

The Community Relations Plan will be reviewed and approved by the Site Manager, Regional Manager, and Community Relations Manager prior to being submitted to the USEPA.

The respective roles of USEPA and REM II

TASK 4. PREPARE QUALITY ASSURANCE PROJECT PLAN

has commenced on

decision made that submitted RI as needed to complete the RI/FS

a detailed plan for the RI/FS is being developed

The Guam EPA, in conjunction with the University of Guam, is anticipating doing the RI/FS. During the initial site visit, their role in the RI/FS will be clarified. (If they proceed with the RI/FS, then the Quality Assurance Project Plan will be prepared by them.) If USEPA does the RI/FS, then REM II will prepare the plan after submitting a Work Assignment Amendment for approval. A decision on who will prepare the plan will be provided in the Initial Site Evaluation Report. This task is not budgeted at this time. If the plan is prepared by REM II, the following criteria will guide its preparation.

Objectives:

Costs

The objective of this task is to prepare the Quality Assurance Project Plan (QAPP).

Data Sources:

The QAPP will be prepared based on the findings presented in the Initial Site Evaluation Report.

Assumptions:

This task will be done only after approval is received for a Work Assignment Amendment and a budget has been established to do the work.

Deliverables: Quality Assurance Project Plan.

Quality Control:

The QAPP will be reviewed by the Regional Manager, Quality Assurance Director, Technical Operations Manager, and the Health and Safety Manager.

TASK 5. PREPARE DRAFT PROJECT OPERATIONS PLAN

is needed and, if so, it should be
As with the Community Relations Plan and the Quality Assurance Project Plan, a determination will be made after the initial site visit whether the Project Operations Plan ~~will be~~ prepared by USEPA or Guam EPA. Therefore, this task is not budgeted at this time, with the exception of the initial site visit Health and Safety Plan. If the plan is prepared by REM II, the following criteria will guide its preparation.

Objective:

The objective of this task will be to prepare the various components of the Project Operations Plan (POP), which will be finalized and used during the subsequent RI/FS. The POP consists of the following five components:

1. Health and Safety Plan
2. Sampling and Analysis Plan
3. Site Management Plan
4. Quality Control Plan
5. Data Management Plan

Data Sources:

The POP will be prepared based on the findings presented in the Initial Site Evaluation Report.

Assumptions:

This task will be done only after approval is received for a Work Assignment Amendment and a budget has been established to do the work.

Quality Control:

Prior to submittal to EPA, the draft POP will be reviewed by the Regional Manager, Quality Assurance Director, Technical Operations Manager, and Health and Safety Manager.

limited RI
TASK 6. PREPARE RI/FS WORK PLAN

Objective:

The objective of this task is to develop the Work Plan for conducting a limited Remedial Investigation, and Feasibility Study (RI/FS). The Work Plan should take into account any remedial work which has been done to date, is presently underway, or is planned in the near future.

USEPA intends to use the results of the limited RI to either proceed with the delisting of the Ordot Landfill site from the NPL (if no groundwater or surface water contamination is documented) or broaden the RI and include a Feasibility Study report. In regards to the former, sufficient information and data will be provided to support delisting requirements.

Data Sources:

> The RI/FS Work Plan will be prepared based on the findings presented in the Initial Site Evaluation Report.

Assumptions:

> USEPA will coordinate review of Draft Work Plan within two weeks of submittal date. Review by local agencies will be coordinated with USEPA review so that only one Draft RI/FS Work Plan will be necessary.

Deliverables:

The deliverables for this task will be the Draft and Final RI/FS Work Plan.

Quality Control:

The Draft and Final RI/FS Work Plan will be reviewed and approved for technical completeness and adherence to established guidelines by the Regional Manager, the Technical Operations Manager, and the Finance & Administration Manager prior to being submitted to the USEPA.

TASK 7. TECHNICAL AND FINANCIAL MANAGEMENT

Objective:

The objective of this task is to prepare and submit monthly technical and financial progress reports to USEPA and to attend progress meetings as required.

Data Sources:

Information to support Technical and Financial Management efforts will come from the following:

- o The Work Plan Memorandum.
- o Output from Tasks 2, 3, 4, 5, and 6.
- o REM II management information system.

Assumptions:

Monthly progress reports will be prepared in conformance with the standard REM II monthly report format. Progress meetings will be scheduled during the preparation of the RI/FS Work Plan.

Deliverables: Monthly progress reports

Quality Control:

All monthly progress reports will be reviewed and approved by the Regional Manager prior to being submitted to NPMO and subsequently to USEPA.

3.0 BUDGET

The costs associated with the above Scope of Services are presented in Attachments A, B, and C. We have based these costs on the assumption that the required data is readily accessible and in a form that will be readily usable, and that only one trip to Guam will be necessary during the preparation of the Work Plan; if this is not the case, then the appropriate budget amendments will be identified and submitted for approval by USEPA during the progress of the work. In addition, we have budgeted for several trips between the CDM Irvine office and EPA Regional offices in San Francisco. Attachment A presents our labor cost summary. Attachment B details our expenses. Attachment C details our other direct costs. Attachment D is a cost summary.

These costs are in accordance with our approved labor categories and reflect our understanding of the project requirements at this time.

4.0 SCHEDULE

The schedule of activities by task is presented in Attachment F. This schedule is based on a 10-day turn-around on required USEPA comments and approvals. Assuming a start date of 23 September 1985, the expected submittal date for the Final RI/FS Work Plan is December 13, 1985.

5.0 KEY STAFF

The designated Site Manager is Mr. James A. Goodrich, CEG. His resume is presented as Attachment H.

```
Site Number: 279
Site Name: ORDOT LANDFILL, GUAM
WA Code: 168-9LA7.0
```

Date: AUGUST 23, 1985

Phase: WORK PLAN PREPARATION

TASK	Professional 4 \$81.30 /hr		Professional 3 \$61.30 /hr		Professional 2 \$38.95 /hr		Professional 1 \$28.60 /hr		Technician 2 /hr		Technician 1 \$31.50 /hr		TOTAL TECHNICAL LOE	
	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$
1. PREPARE W.P. MEMO	2	\$163	40	\$2,452	0	\$0	6	\$172	0	\$0	8	\$252	56	\$3,039
2. DATA COLLECTION	16	\$1,304	175	\$10,728	120	\$4,674	0	\$0	0	\$0	56	\$1,764	367	\$18,478
3. PREPARE C.R. PLAN*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
4. PREPARE QAP PLAN*	0	\$0	0	\$0	0	\$0	1	\$28.60	1	\$31.50	1	\$31.50	0	\$0
5. PREPARE POP*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
6. PREPARE WORK PLAN	16	\$1,304	160	\$9,808	20	\$779	32	\$915	0	\$0	40	\$1,260	268	\$14,064
7. PROJECT MANAGEMENT	12	\$978	48	\$2,942	8	\$312	0	\$0	0	\$0	0	\$0	68	\$4,232
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
	1	\$81.30	1	\$61.30	1	\$38.95	1	\$28.60	1	\$0	1	\$31.50	0	\$0
TOTALS	46	\$3,749	423	\$25,930	148	\$5,763	38	\$1,087	0	\$0	104	\$3,276	759	\$39,886


```

Site Number:      279
-----
Site Name:        ORDOT LANDFILL, GUAM
-----
WA Code:         168-9LA7.0
-----

```

Site Manager: J.A. GOODRICH
Date: AUGUST 23, 1985
Phase: WORK PLAN PREPARATION

TASK	Clerical 3 \$27.30 /hr		Clerical 2 \$23.04 /hr		Clerical 1 \$18.20 /hr		TOTAL CLERICAL LOE		TOTAL LABOR LOE	
	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1. PREPARE W.P. MEMO	6	\$164	0	\$0	16	\$291	22	\$455	78	\$3,494
2. DATA COLLECTION	24	\$655	0	\$0		\$0	24	\$655	391	\$19,125
3. PREPARE C.R. PLAN*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
4. PREPARE OAP PLAN*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
5. PREPARE POP*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
6. PREPARE WORK PLAN	8	\$218	40	\$922	16	\$291	64	\$1,431	332	\$15,497
7. PROJECT MANAGEMENT	0	\$0	24	\$553	24	\$437	48	\$990	116	\$5,222
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
		\$0		\$0		\$0	0	\$0	0	\$0
TOTALS	38	\$1,037	64	\$1,475	56	\$1,019	158	\$3,531	917	\$43,337

ATTACHMENT B
REM II
ODC'S

Site Number: 279

Site Name: ORDOT LANDFILL, GUAM

Phase: WORK PLAN PREPARATION

WA Code: 168-9LA7.0

Site Manager: J.A. GOODRICH

SSAN:

Date: AUGUST 23, 1985

TASK	Zerox	Blue-prints	Mail/Courier	Supplies	Telephone	Computer	Drilling Testing	RI Disposal	Non-CLP Lab	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1. PREPARE W.P. MEMO	\$100	\$0	\$100	\$0	\$50	\$0	\$0	\$0	\$0	\$250
2. DATA COLLECTION	\$400	\$150	\$500	\$100	\$300	\$50	\$0	\$0	\$0	\$1,500
3. PREPARE C.R. PLAN*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4. PREPARE QAP PLAN*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5. PREPARE POP*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6. PREPARE WORK PLAN	\$500	\$150	\$100	\$25	\$100	\$0	\$0	\$0	\$0	\$875
7. PROJECT MANAGEMENT	\$25	\$0	\$150	\$0	\$50	\$0	\$0	\$0	\$0	\$225
										\$0
										\$0
										\$0
										\$0
										\$0
TOTALS	\$1,025	\$300	\$850	\$125	\$500	\$50	\$0	\$0	\$0	\$2,850

ATTACHMENT C
REM II
EXPENSES

Site Number: 277

Site Manager: J.A. GOODRICH

Site Name: GROOT LANDFILL, GUAM

SSAN:

Phase: WORK PLAN PREPARATION

Date: AUGUST 23, 1985

WA Code: 168-9LA7.0

TASK	Equipment \$100 /day		Per Diem \$90 /day		Trans- portation	Subpool	G & A * 0.0%	Total
	Days	\$	Days	\$	\$	\$	\$	\$
1. PREPARE W.P. MEMO		\$0	0	\$0	\$0			\$0
2. DATA COLLECTION	5	\$500	10	\$900	\$1,250			\$2,650
3. PREPARE C.R. PLAN*		\$0	0	\$0	\$0			\$0
4. PREPARE QAP PLAN*		\$0		\$0	\$0			\$0
5. PREPARE POP*		\$0	0	\$0	\$0			\$0
6. PREPARE WORK PLAN		\$0	4	\$360	\$800			\$1,160
7. PROJECT MANAGEMENT		\$0	0	\$0	\$0			\$0
		\$0						\$0
		\$0						\$0
		\$0						\$0
		\$0						\$0
		\$0						\$0
TOTALS	5	\$500	14	\$1,260	\$2,050	\$0	\$0	\$3,810

* Subcontractor pool excluded from G&A computation.

ATTACHMENT D
REM II
SUMMARY

Site Number: 279

Site Name: ORDOT LANDFILL, GUAM

Phase: WORK PLAN PREPARATION

WA Code: 168-9LA7.0

Site Manager: J.A. GOODRICH

SSAN:

Date: AUGUST 23, 1985

TASK	Professional		Support		Equipment	Travel	ODC's	Sub-Pool	Indirect	Total
	Hours	\$	Hours	\$	\$	\$	\$	\$	\$	\$
1. PREPARE W.P. MEMO	56	\$3,039	22	\$455		\$0	\$250			\$3,744
2. DATA COLLECTION	367	\$18,470	24	\$655	\$500	\$2,150	\$1,500			\$23,275
3. PREPARE C.R. PLAN	0	\$0	0	\$0		\$0	\$0			\$0
4. PREPARE QAP PLAN	0	\$0	0	\$0		\$0	\$0			\$0
5. PREPARE POP	0	\$0	0	\$0		\$0	\$0			\$0
6. PREPARE WORK PLAN	268	\$14,066	64	\$1,431		\$1,160	\$875			\$17,532
7. PROJECT MANAGEMENT	68	\$4,232	48	\$990		\$0	\$225			\$5,447
										\$0
										\$0
										\$0
TOTALS	759	\$39,807	158	\$3,531	\$500	\$3,310	\$2,850	\$0	\$0	\$49,998

SCHEDULE OF DELIVERABLES

ATTACHMENT G

DELIVERABLE	WORK ASSIGNMENT		QUALITY CONTROL PLAN (QCP)		QUALITY SURVEILLANCE		REM II APPROVAL					USEPA REVIEW					STATE REVIEW		OTHER REVIEW	
	AUTH.	DUE	ACTIVITY	DATE	ACTIVITY	DATE	RM	TOM	HSM	FAM	QAD	PO	CO	RPO	RSPO					
1. WORK PLAN MEMORANDUM	8-14-85	9-13-85	A.1c,d	9-10-85			9-10-85	9-10-85	9-10-85	9-10-85		9-20-85	9-20-85	9-20-85	9-20-85					
2. INITIAL SITE EVALUATION REPORT	8-14-85	11-8-85	A.1 and B.1	10-25-85			11-1-85	11-1-85		11-1-85	11-1-85	11-22-85	11-22-85	11-22-85	11-22-85					
3. RI/FS WORK PLAN	8-14-85	12-13-85	A.3	11-29-85			12-6-85	12-6-85	12-6-85	12-6-85		12-27-85	12-27-85	12-27-85	12-27-85					
<div>Bugs</div>																				

JAMES A. GOODRICH

Supervising Hydrogeologist
Camp Dresser & McKee Inc.

QUALIFICATIONS SUMMARY

Mr. Goodrich has over 12 years of professional experience in engineering geology, hydrogeology, and water resources engineering. He has participated in a broad range of geotechnical and hydrologic investigations, and has directed numerous water supply and groundwater management projects.

EXPERIENCE

Mr. Goodrich has a broad background in engineering geology and hydrology, with primary expertise in hydrogeologic and groundwater quality evaluations. His hydrogeologic experience includes aquifer exploration, testing and evaluation, water supply development, determination of basin safe yield, computer modeling of groundwater systems, design and evaluation of groundwater recharge systems, and water well design and construction. Representative hydrogeologic projects include water supply development and well field construction for the City of Managua, Nicaragua; evaluation of groundwater basin safe yield and aquifer impact for the construction and deployment of the Air Force Mobile (MX) Missile system in Nevada and Utah; design and computer simulation of a major well field in Orange County, California; conceptual design of a large-scale groundwater recharge system in the Chino Basin, California; and safe yield of a fresh water lens system on the Island of Guam. Mr. Goodrich's experience in water quality evaluations include environmental impact analysis of oil shale mining operations in Utah; salt water intrusion studies in Orange County, California; Guam, and Puerto Rico; and monitoring of evaporation pond facility impacts on groundwater resources for a nuclear power plant near Phoenix, Arizona. His engineering geology experience ranges from hillside slope stability analyses to water reservoir and nuclear power plant siting investigations.

EDUCATION	B.S. - Geology, University of California (Los Angeles), 1973
	M.S. - Geology, University of Southern California, 1978
REGISTRATION	Geologist: California, 1979; Oregon, 1978; Idaho, 1979
	Engineering Geologist: California, 1979; Oregon, 1978

PROFESSIONAL
HISTORY

1981 to Date Supervising Hydrogeologist - Camp Dresser & McKee Inc.

Project engineer for location of spreading, injection, and extraction facilities on the Chino Basin Groundwater Storage Program project performed for the Metropolitan Water District of Southern California and the California Department of Water Resources.

Manager of a project for the Guam EPA to determine the sustainable yield of the Island of Guam aquifer system, including preparation of a well construction manual. Work included water quality sampling and priority pollutant investigations.

Project hydrogeologist for design of two 4,000 gpm wells drilled to a depth of approximately 1,500 feet for the City of Anaheim, California.

Project hydrogeologist for location and design of two 1,200 gpm wells for the Arlington Subbasin desalter project being done for Santa Ana Watershed Project Authority in southern California. Work included preliminary studies and well tests.

Project hydrogeologist for development of a water resource management strategy for the Big Bear Municipal Water District. Included well measurement program, preliminary well design, and safe yield analysis.

1979 to 1981 Project Hydrogeologist - Fugro (ERTEC), Inc.

Project hydrogeologist in charge of regional water resources investigations, groundwater basin management studies, groundwater aquifer testing, and basin yield analyses for the Air Force MX missile project in Nevada and Utah.

Monitored solid and liquid waste disposal areas at the Palo Verde Nuclear Generating Station near Phoenix and major coal and uranium mining areas in Wyoming.

1977 to 1979 Hydrogeologist and Engineering Geologist - James M. Montgomery, Consulting Engineers, Inc.

Performed well field impact and design in Orange County, California, for the Orange County Water District.

Conducted exploration and evaluated groundwater supply for the City of Managua, Nicaragua, and the Empresa Aquadora de Managua.

1975 to 1977	Staff Engineering Geologist - Leighton and Associates. Responsible for field soils testing/fill control; detailed tract mapping; trench and cut-slope mapping; bucket auger borehole logging and sampling; air photo analyses; in-grading engineering geology inspection; engineering geology report seismic safety elements preparation; percolation tests; and groundwater investigations.
1973 to 1975	Staff Geologist - Fugro (ERTEC), Wrote a major portion of the regional and site geology for the Preliminary Safety Analysis Report (PSAR) for a proposed nuclear power plant in Puerto Rico that was submitted to the Nuclear Regulatory Commission.
TECHNICAL SOCIETIES	National Water Well Association International Association of Hydrogeologists American Water Resources Association Association of California Water Agencies Orange County Water Association Association of Engineering Geologists
PROFESSIONAL AND PUBLIC ACTIVITIES	Director of the Board, Irvine Ranch Water District, Irvine, California, 1980 to date. Lecturer in Groundwater Hydrology at California Polytechnic University, Pomona. Chairman, Hydrogeology and Environmental Geology Committee, Southern California Section of the Association of Engineering Geologists, 1980
PUBLICATIONS	"Groundwater Management in the Guam Island Aquifer System," paper for the International Association of Hydrogeologists Conference on Groundwater and Man, Sydney, Australia, 1983 Mr. Goodrich has developed and published several calculator programs for the Professional Program Exchange (PPX) of Texas Instruments Corp.
ADDITIONAL TRAINING	Graduate Studies - Civil Engineering, University of Southern California. Currently Ph.D. Candidate - Civil Engineering, University of California (Irvine).